

## **REMARKS/ARGUMENTS**

Applicants gratefully acknowledge the examiner's allowance of claims 2-22, 44-57, 67-80, 91-109, 126-128, 142-156, 212, 217 and 239-243. Applicants also respectfully acknowledge the examiner's (1) withdrawal of objection to claims 212 and 218, (2) withdrawal of rejection of claims 95-104 and 145-152 under 35 U.S.C. §112, second paragraph, and (3) withdrawal of rejections under 35 U.S.C. §102 and 35 U.S.C. §103.

Claims 95-104 have been amended to correct an inadvertent error. The word "substituent" in claims 95-104 has been replaced with "oxygen," which has antecedent basis. Applicants request entry of the amendments under 37 C.F.R. 1.116, as the amendments place the application in condition for allowance.

Claim 105 has been amended. Claim 105 was not properly amended in the previous response (Paper No. 8). Claim 105 was inadvertently labeled "original" instead of "currently amended." Applicants request entry of the amendment to claim 105 under 37 C.F.R. 1.116, as the amendment places the application in condition for allowance.

### **Election/Restrictions**

Applicants elected Group I, claims 1-168, 211, 212, 217 and 218 in Paper No. 8. Claims 169-174, 207-210, 213-216 and 219-238 have been canceled without prejudice. Continuation-in-part application No. 10/674,203 has been filed to further prosecute the subject matter of these claims.

### **Claim Rejections – 35 U.S.C. §112**

The examiner has rejected claims 23-43, 58-66, 81-89, 110-124, 129-140 and 157-168 under 35 U.S.C. §112, second paragraph. The examiner states that claims 23-43, 58-66, 81-89, 110-124, 129-140 and 157-168 recite a hardness in units of "GPa", wherein the claims and the

specification fail to clearly establish what method of testing is used to determine hardness. The examiner states that one of ordinary skill would not recognize “GPa” as indicating a particular hardness from the known prior art.

### Response

The rejection is not proper under 35 U.S.C. § 112 because “one skilled in the art would understand all language in the claims when read in light of the specification, as the claims must be.” *Rosemount, Inc. v. Beckman Instruments, Inc.*, 221 U.S.P.Q. 1, 7 (Fed. Cir. 1984), citing *Caterpillar Tractor Co. v. Berco, S.P.A.*, 219 U.S.P.Q. 185 (Fed. Cir. 1983). As stated in the specification, “[c]hromium and its alloys generally comprise an **extremely thin film** comprising chromium oxide ( $\text{Cr}_2\text{O}_3$ ) at the surface.” See Specification, page 4, ll. 1-2 (emphasis added). In addition, the chromium coating of the present application is treated with an additive using ion implantation, wherein “the additive molecules penetrate at least 50 nm from the outer surface, more preferably at least about 150 nm, and most preferably about 250 nm or more.” See Specification, page 6, ll. 16-18. Persons of ordinary skill in the art would understand that hardness measurements of thin ion implanted layers, thin surface modified layers, and relatively thin coatings and substrates must be performed using very low loads in the millinewton range. Persons of ordinary skill in the art would recognize that such testing is conducted using a nano-indentation hardness tester, including a diamond Berkovich indenter. Persons of ordinary skill in the art also would understand that the more widely used methods for testing hardness, such as Rockwell, Knoop, Brinell, etc., are too invasive or severe to provide a measure of hardness of thin ion implanted layers. Declaration of Geoffrey Dearnaley, ¶’s 4-5 (submitted herewith).

Applicants respectfully request that the examiner withdraw the rejection of claims 23-43, 58-66, 81-89, 110-124, 129-140 and 157-168 under 35 U.S.C. §112, second paragraph.

## **CONCLUSION**

Applicants respectfully request reconsideration and allowance of all of the pending claims.

Respectfully submitted,

A handwritten signature in cursive script, reading "Paula Morris", is written over a horizontal line.

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